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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/735,613

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Shigeo Fukuda

FUKU3001/EM

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05/02/2006

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EXAMINER

BERNATZ, KEVIN M

ART UNIT

PAPER NUMBER

1773

DATE MAILED: 05/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/735,613

Applicant(s)

FUKUDA, SHIGEO

Examiner

Kevin M. Bernatz

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1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 6-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Response to Amendment

1. Amendments to claim 6, filed on March 7, 2006 and April 4, 2006, have been entered in the above-identified application.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Request for Continued Examination

3. The Request for Continued Examination (RCE) under 37 CFR 1.53 (d) filed on March 7, 2006 is acceptable and a RCE has been established. An action on the RCE follows.

Examiner's Comments

4. Regarding the limitation(s) ""wherein the permanent magnet ring consists of unit permanent magnets" in claim 6, the Examiner has given the term(s) the broadest reasonable interpretation(s) consistent with the written description in applicants' specification as it would be interpreted by one of ordinary skill in the art. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re Donaldson Co., Inc.*, 16 F.3d 1190, 1192-95, 29 USPQ2d 1845, 1848-50 (Fed. Cir. 1994). See MPEP 2111. Specifically, the Examiner notes that while other elements besides the "unit permanent magnets" are excluded from being part of the "permanent magnetic ring", the

Examiner notes that additional elements/layers (including non-magnetic elements/layers) *are* still permitted as part of the “unit permanent magnets”, provided that each “unit permanent magnet” possesses permanent magnetic properties. I.e. see claim 10, which clearly permits the use of non-magnetic layers coating the permanent magnetic material making up the “unit permanent magnets”.

Should applicants desire to claim that the unit permanent magnets consist of magnetic material (with or without the coating layers of claim 10), applicants are suggested to reword line 7 to recite “said unit permanent magnets [is] consist of a rare earth magnet and optionally one or both of a plated layer and a siliceous coating layer”

5. The Examiner requests clarification regarding claim 9, since the Figures appear to show that the magnetic attraction is in “point” contact and not “line contact”. Should “line contact” be correct, the Examiner kindly requests that applicants point out the relevant portions of the specification and drawings that illustrates the embodiment covered by the subject matter of claim 9.

Claim Rejections - 35 USC § 103

6. Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakurai et al. (JP 11-103915 A) in view of Takeshita et al. (U.S. Patent No. 4,981,532). See provided Machine Translation of JP '915 A.

Regarding claim 6, Sakurai et al. disclose a permanent magnetic ring (*Figure 1*) formed by arranging a plurality of unit permanent magnets (*Paragraphs 0004 – 0005*), wherein the permanent magnet ring consists of unit permanent magnets (*Figure 1 and*

Paragraphs 0001 and 0004 – 0005), wherein each of the unit permanent magnets is formed in a shape meeting applicants' claimed Markush group (*Figures*), and a predetermined number of the unit permanent magnets are magnetically attracted to each other on respective side surfaces so as to be formed in a ring shape (*Figure 1 and Paragraphs 0001, 0004 and 0005*), wherein each of a plurality of unit permanent magnets is a rare earth magnet (*Paragraph 0004 – "neodymium magnet"*) and is a uniaxial anisotropic magnet in which a N pole or a S pole is formed on one part of the side surface orthogonal to an easily magnetization direction (*Figures and Paragraphs 0005, 0006 and 0010*), the S pole or the N pole is formed on another part of the side surface opposite to said one part of the side surface (*Figures*), the side surface, on which the magnetic poles of the unit permanent magnet are formed, is formed to be a curved surface (*Figures*), and a predetermined number of the unit permanent magnets, which are the uniaxial anisotropic magnets, are magnetically attracted to each other in a line contact aspect or a point contact aspect on the curved surfaces on which the magnetic poles are formed, so as to be formed in a ring shape having a predetermined size (*Figures and Paragraphs 0001 and 0010*).

Regarding the limitation(s) "which is formed at a time of molding a raw material including a rare earth element in a magnetic field, by magnetizing along said easily magnetizing direction after sintering", the Examiner notes that this limitation(s) are/(is a) process limitation(s) and is/are not further limiting in terms of the structure resulting from the claimed process. Specifically, in a product claim, as long as the prior art product meets the claimed structural limitations, the method by which the product is formed is

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not germane to the determination of patentability of the product unless an unobvious difference can be shown to result from the claimed process limitations. In the instant case, the Examiner notes that the final unit permanent magnets of Sakurai et al. possess a N and S pole meeting applicants' claimed structural limitations.

Sakurai et al. fail to disclose using a neodymium iron boron magnet as the rare earth "neodymium magnet".

However, Takeshita et al. teach that rare earth-iron-boron magnets, including Nd-Fe-B magnets, possess superior permanent magnetic properties versus other types of alloy magnetic powders (*col. 1, lines 5 – 32*).

It would, therefore, have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the device of Sakurai et al. to utilize a Nd-Fe-B permanent magnetic material as taught by Takeshita et al. since Nd-Fe-B magnets possess superior permanent magnetic properties.

Regarding claim 8, Sakurai et al. teach spherical unit permanent magnets meeting applicants' claimed limitations (*Figures and Paragraph 0010*).

7. Claims 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakurai et al. in view of Takeshita et al. as applied above, and further in view of Yellen (U.S. Patent No. 6,427,486 B1).

Sakurai et al. and Takeshita et al. are relied upon as described above.

None of above disclose unit permanent magnets meeting applicants' claimed shape limitations.

However, Yellen teaches that it is known in the bracelet art that bracelets formed of magnetic material formed into shapes meeting the claimed limitations are functional equivalents to the spherical magnetic bodies used in the bracelet taught in the Sakurai et al. invention (*col. 1, line 8 bridging col. 2, line 58 and Figures*).

It would therefore have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the device of Sakurai et al. in view of Takeshita et al. to form the unit permanent magnets in a shape meeting applicants' claimed limitations as taught by Yellen since such shapes are art recognized equivalents in the bracelet art and substitution of equivalents requires no express motivation as long as the prior art recognizes the equivalency. *In re Fount* 213 USPQ 532 (CCPA 1982); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *Graver Tank & Mfg. Co. Inc. v. Linde Air Products Co.* 85 USPQ 328 (USSC 1950).

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakurai et al. in view of Takeshita et al. as applied above, and further in view of Hoffman (U.S. Patent No. 4,517,217).

Sakurai et al. and Takeshita et al. are relied upon as described above.

None of above disclose coating layers meeting applicants' claimed limitations.

However, Hoffman teaches the use of a transparent abrasion resistant film of members of a Markush group that includes SiO₂ to be coated over articles that have been previously plated with gold in order to avoid the optical discoloration of the gold

and provide wear protection (*Abstract*). The Examiner notes that gold may have various colors e.g. white, yellow, rose.

It would, therefore, have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the device of Sakurai et al. in view of Takeshita et al. to utilize coatings meeting applicants' claimed limitations as taught by Hoffman in order to provide a colored bracelet with wear and discoloration protection.

9. Claims 6 – 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakurai et al. (JP '915 A) in view of Takeshita et al. ('532) and Yellen ('486 B1).

For the purpose of this rejection, the Examiner has taken the position that the unit permanent magnets consist of Nd-Fe-B magnetic material and the optional coating limitations of claim 10. While the Examiner maintains that the scope given the claims are noted in Paragraph 4 above is proper, the Examiner has included this rejection (and the following one for claim 10 in Paragraph 10 below) for completeness.

Regarding claim 6, Sakurai et al. disclose a permanent magnetic ring (*Figure 1*) formed by arranging a plurality of unit permanent magnets (*Paragraphs 0004 – 0005*), wherein the permanent magnet ring consists of unit permanent magnets (*Figure 1 and Paragraphs 0001 and 0004 – 0005*), wherein each of the unit permanent magnets is formed in a shape meeting applicants' claimed Markush group (*Figures*), and a predetermined number of the unit permanent magnets are magnetically attracted to each other on respective side surfaces so as to be formed in a ring shape (*Figure 1 and Paragraphs 0001, 0004 and 0005*), wherein each of a plurality of unit permanent

magnets is a rare earth magnet (*Paragraph 0004 – “neodymium magnet”*) and is a uniaxial anisotropic magnet in which a N pole or a S pole is formed on one part of the side surface orthogonal to an easily magnetization direction (*Figures and Paragraphs 0005, 0006 and 0010*), the S pole or the N pole is formed on another part of the side surface opposite to said one part of the side surface (*Figures*), the side surface, on which the magnetic poles of the unit permanent magnet are formed, is formed to be a curved surface (*Figures*), and a predetermined number of the unit permanent magnets, which are the uniaxial anisotropic magnets, are magnetically attracted to each other in a line contact aspect or a point contact aspect on the curved surfaces on which the magnetic poles are formed, so as to be formed in a ring shape having a predetermined size (*Figures and Paragraphs 0001 and 0010*).

Regarding the limitation(s) “which is formed at a time of molding a raw material including a rare earth element in a magnetic field, by magnetizing along said easily magnetizing direction after sintering”, the Examiner notes that this limitation(s) are/(is a) process limitation(s) and is/are not further limiting in terms of the structure resulting from the claimed process. Specifically, in a product claim, as long as the prior art product meets the claimed structural limitations, the method by which the product is formed is not germane to the determination of patentability of the product unless an unobvious difference can be shown to result from the claimed process limitations. In the instant case, the Examiner notes that the final unit permanent magnets of Sakurai et al. possess a N and S pole meeting applicants’ claimed structural limitations.

Sakurai et al. fail to disclose using a neodymium iron boron magnet as the rare earth "neodymium magnet".

However, Takeshita et al. teach that rare earth-iron-boron magnets, including Nd-Fe-B magnets, possess superior permanent magnetic properties versus other types of alloy magnetic powders (*col. 1, lines 5 – 32*).

It would, therefore, have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the device of Sakurai et al. to utilize a Nd-Fe-B permanent magnetic material as taught by Takeshita et al. since Nd-Fe-B magnets possess superior permanent magnetic properties.

While Sakurai et al. teach forming a single clasp unit permanent magnet such that it consists of a magnetic material (*Figure 3a and Paragraph 0008*), Sakurai et al. does not appear to teach using such pure unit permanent magnets to form the entire bracelet.

However, Yellen teaches that one can form unit permanent magnets for a bracelet such that they consist of permanent magnetic material to provide strong magnetic bonding as well as the ability to easily change the aesthetic appearance of the article (*col. 1, line 5 bridging col. 2, line 58; col. 3, lines 25 – 40; and Figures*).

It would, therefore, have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the device of Sakurai et al. in view of Takeshita et al. to utilize unit permanent magnets consisting of magnetic material as taught by Yellen since such a structure allows for strong magnetic bonding as well as the ability easily change the aesthetic appearance of the article. Furthermore, the

Examiner notes that one of ordinary skill in the art would recognize that such a change is merely a change between structural/functional equivalents and, as noted above, such a change is recognized as being within the knowledge of one of ordinary skill in the art.

Regarding claims 7 and 9, Yellen teaches that it is known in the bracelet art that bracelets formed of magnetic material formed into shapes meeting the claimed limitations are functional equivalents to the spherical magnetic bodies used in the bracelet taught in the Sakurai et al. invention (*col. 1, line 8 bridging col. 2, line 58 and Figures*).

Regarding claim 8, Sakurai et al. teach spherical unit permanent magnets meeting applicants' claimed limitations (*Figures and Paragraph 0010*).

10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakurai et al. in view of Takeshita et al. and Yellen as applied above, and further in view of Hoffman ('217).

Sakurai et al., Takeshita et al. and Yellen are relied upon as described above.

None of above disclose coating layers meeting applicants' claimed limitations.

However, Hoffman teaches the use of a transparent abrasion resistant film of members of a Markush group that includes SiO₂ to be coated over articles that have been previously plated with gold in order to avoid the optical discoloration of the gold and provide wear protection (*Abstract*). The Examiner notes that gold may have various colors e.g. white, yellow, rose.

It would, therefore, have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the device of Sakurai et al. in view of Takeshita et al. and Yellen to utilize coatings meeting applicants' claimed limitations as taught by Hoffman in order to provide a colored bracelet with wear and discoloration protection.

While Yellen teaches away from using coatings on the pure magnetic bodies (*col. 1, lines 48 – 50*), the Examiner deems that one of ordinary skill in the art would appreciate that there is a known results-effective trade-off between appearance/wear protection provided by coatings versus magnetic bonding strength provided by direct exchange coupling of the magnetic bodies. It is the Examiner's opinion that one of ordinary skill in the art would have been sufficiently knowledgeable to recognize that if a strong enough magnetic material is used as the magnetic bodies, thin coating layers as taught by Hoffman would provide the best optimization between aesthetics, wear resistance and bonding strength.

Response to Arguments

11. The rejection of claims 6 - 10 under 35 U.S.C § 102(b) and/or 103(a) – Sakurai et al., alone or in view of various references

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection. In so far as they apply to the present rejections of record, applicants argue that Sakurai et al. fail to teach spherical unit permanent magnets and a

magnetic ring consisting of unit permanent magnets. The Examiner respectfully disagrees.

The Examiner notes that applicants appear to be giving the term "unit permanent magnet" a scope different than that afforded it by the Examiner. Applicants are reminded that claim terms must be given their broadest reasonable interpretation(s) consistent with the written description in applicants' specification as it would be interpreted by one of ordinary skill in the art. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re Donaldson Co., Inc.*, 16 F.3d 1190, 1192-95, 29 USPQ2d 1845, 1848-50 (Fed. Cir. 1994). See MPEP 2111. Specifically, each "unit permanent magnet" can encompass both magnetic and non-magnetic material (e.g. see applicants' claim 10), provided that the overall body possesses permanent magnetic material. The present claim language excludes other elements such as chains, additional pendent materials, etc., but it does not exclude non-magnetic material from being part of the unit permanent magnet bodies. See also Paragraphs 4, 9 and 10 above.

Conclusion


12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Bernatz whose telephone number is (571) 272-1505. The examiner can normally be reached on M-F, 9:00 AM - 6:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KMB
April 28, 2006


Kevin M. Bernatz, PhD
Primary Examiner